Appendix 2.1 Tables of Analytical Methods

The tables in this section are similar to those found in the New Jersey Regulations Governing the Certification of Laboratories and Environmental Measurements N.J.A.C. 7:18.The tables were updated to reflect the current methodology changes and new methods that have been added since the Regulations have been written. These tables are provided for guidance only if there is a conflict between the Tables and the information provided by the Office of Quality Assurance or their regulations, the Office of Quality Assurance information or decision always takes precedent over the tables. Note: Throughout these tables "P or G" in the Container column means "Plastic or Glass, either soft or hard" respectively with the exception of Fluoride which is polyethylene only. Footnotes appear on the last page of this Appendix.

Table 2.2 Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Total Coliform Finished Drinking Water	Cool 4°C, 0.008% sodium thiosulfate ($Na_2S_2O_3$)	P or G	30 hours
Heterotrophic Plate Count Finished Drinking Water	Cool 4°C, 0.008% $Na_2S_2O_3$	P or G	8 hours
Total Coliform Source Water	Cool 4°C, 0.008% $Na_2S_2O_3$	P or G	8 hours
Fecal Coliform Source Water	Cool 4°C, 0.008% $Na_2S_2O_3$	P or G	8 hours
Cryptosporidium	Cool 0-8°C, No Freezing	LPDE Cubitainer	Elution must begin within 96hrs of sampling[14]
Giardi cysts	Cool 0-8°C, No Freezing	LPDE Cubitainer	Elution must begin within 96hrs of sampling[14]
Alkalinity	Cool 4°C	P or G	l4 days
Antimony	Conc. HNO_3 to pH < 2	P or G	6 months
Arsenic	Conc. HNO_3 to pH < 2	P or G	6 months
Asbestos	Cool 4°C	P or G	Filter within 48 hours
Barium	Conc. HNO_3 to pH < 2	P or G	6 months
Beryllium	Conc. HNO_3 to pH < 2	P or G	6 months
Bromate	50 mg/L Ethylenediamine (EDA) solution	P or G	28 days
Bromide	None	P or G	28 days
Cadmium	Conc. HNO_3 to pH < 2	P or G	6 months
Calcium	Conc. HNO_3 to pH < 2	P or G	6 months
Chlorate	50 mg/L Ethylenediamine (EDA) solution	P or G	28 days
Chloride	None	P or G	28 days
Chlorite	50 mg/L Ethylenediamine (EDA) solution Cool 4°C	P or G	14 days
Chlorinated Hydrocarbons	Refrigerate at 4°C. After collection, Ascorbic acid	Glass with foil or Teflon®-lined cap	14 days until extraction; 40 days after extraction

Table 2.2 (continued) Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Chlorinated Pesticides	80mg/L $Na_2S_2O_3$ if residual chlorine (Cl_2) is present, Cool 4°C	Glass with Teflon®-lined septum	7 days until extraction; 14 days after extraction
Chlorinated Phenoxy Acids	80mg/L $Na_2S_2O_3$ if residual chlorine (Cl_2) is present, Cool 4°C	Glass with Teflon®-lined septum	14 days until extraction; 28 days after extraction
Chlorine Dioxide	None	P or G	Analyze Immediately
Chlorinated Acids	Refrigerate at 4°C after collection, Ascorbic acid	Glass with foil or Teflon®-lined cap	7 days until extraction; 30 days after extraction
Chromium	Conc. HNO_3 to pH < 2	P or G	6 months
Copper	Conc. HNO_3 to pH < 2	P or G	6 months
Cyanide	NaOH to pH > 12, Cool 4°C, 0.6 g Ascorbic acid	P or G	14 days
EDB/DBCP/1,2,3-TCP	Cool 4°C, 0.08% $Na_2S_2O_3$	Glass with Teflon®-lined septum	extract: 14 days; 24 hours to analysis
Fluoride	None	Polyethylene only	28 days
Free Chlorine Residual	None	P or G	Analyze Immediately
Lead	Conc. HNO_3 to pH < 2	P or G	6 months
Mercury	Conc. HNO_3 to pH < 2	P or G	28 days
N-Methyl-Carbamoyloximes N-Methyl-Carbamates	Monochloroacetic acid to pH 3, 80mg/L $Na_2S_2O_3$, Cool 4°C until storage, Store at -10°C	Glass with Teflon®-lined septum	28 days at -10°C
Nickel	Conc. HNO_3 to pH < 2	P or G	6 months
Nitrate-Nitrate	Conc. H_2SO_4 to pH < 2; Cool 4°C	P or G	28 days
Nitrate-N	Cool 4°C	P or G	48 hours
Nitrite-N	Cool 4°C	P or G	48 hours
Nitrogen- and Phosphorus-Containing Pesticides	80mg/L $Na_2S_2O_3$ (if residual Cl_2) Cool 4°C	Glass (dark) with Teflon®-lined septum	14 days until extraction; 14 days after extraction
o-Phosphate	Cool 4°C	P or G	48 hours
Perchlorates	None Required	P or G	28 days

Table 2.2 (continued) Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Odor	Cool 4°C	P or G	24 hours
Organic Compounds	If residual Cl_2 40-50 mg sodium arsenite or sodium thiosulfate; if unchlorinated, 6 N HCl to pH < 2	Glass with Teflon®-lined septum	7 days until extraction; 30 days after extraction
Organohalide Pesticides and Commercial PCB Products (Arochlors)	3mg $Na_2S_2O_3$ or 7uL $Na_2S_2O_3$ (0.04g/mL), Cool 4°C until analyzed	Glass with Teflon®-lined septum	If Heptachlor, 7 days until extraction; 40 days after extraction. If no extraction, analysis within 14 days
Ozone	None	G	Analyze Immediately
pH	None	P or G	Analyze Immediately
Selenium	Conc. HNO_3 to pH < 2	P or G	6 months
Silver	Conc. HNO_3 to pH < 2	P or G	6 months
Sodium	Conc. HNO_3 to pH < 2	P or G	6 months
Sulfate	Cool 4°C	P or G	28 days
Temperature	None	P or G	Analyze Immediately
Thallium	Conc. HNO_3 to pH < 2	P or G	6 months
TTHMs	$Na_2S_2O_3$ if residual $C1_2$ and 6N HC1	Glass with Teflon®-lined septum	14 days
Total Dissolved Solids	Cool 4°C	P or G	7 days
Turbidity	Cool 4°C	P or G	48 hours
Volatile Aromatic and Unsaturated Organic Compounds	1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid	Glass with Teflon®-lined septum	14 days
Volatile Halogenated Organic Compounds	1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid	Glass with Teflon®-lined septum	14 days
Volatile Organic Compounds	1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid	Glass with Teflon®-lined septum	14 days

Table 2.3 Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Bacterial Tests			
Coliform (fecal)	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G	6 hours
Coliform (total)	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G Cool	6 hours
Fecal streptococci	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G	6 hours
Enterococcii	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G (sterile)	6 hours
Escherichia coli	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G (sterile)	6 hours
Heterotrophic Plate Count	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	P, G (sterile)	8 hours
Salmonella sp. Bacteria	Cool 4°C	P, G (sterile)	24 hours
Helminth Ova	Cool 4°C	P, G (sterile)	24 hours
Enteric Viruses[13]	Cool 4°C	P, G (sterile)	8 hours
Toxicity Test			
Acute or Chronic Toxicity	Cool 4°C	P, G	36 hours[12]
Inorganic Tests			
Acidity, as $CaCO_3$	Cool 4°C	P, G	l4 days
Alkalinity as $CaCO_3$	Cool 4°C	P, G	l4 days
Aluminum-total[3]	HNO_3 to pH < 2	P, G	6 months
Ammonia (as N)	Cool 4°C H_2SO_4 to pH < 2	P, G	28 days
Antimony-total[3]	HNO_3 to pH < 2	P, G	6 months
Arsenic-total[3]	HNO_3 to pH < 2	P, G	6 months
Barium-total[3]	HNO_3 to pH < 2	P, G	6 months
Beryllium-total[3]	HNO_3 to pH < 2	P, G	6 months
Biochemical Oxygen Demand	Cool 4°C	P, G	48 hours
Boron-total[3]	HNO_3 to pH < 2	P,G	6 months
Bromide[3]	None required	P, G	28 days
Cadmium-total[3]	HNO_3 to pH < 2	P, G	6 months
Calcium-total[3]	HNO_3 to pH < 2	P, G	6 months
Carbonaceous Biochemical Oxygen Demand	Cool 4°C	P, G	48 Hours

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Chemical Oxygen Demand (COD)	Cool 4°C H_2SO_4 to pH < 2	P, G	28 days
Chloride	None required	P, G	28 days
Chlorine total residual (TRC)	None required	P, G	Analyze Immediately
Chromium VI (dissolved)	Cool 4°C	P, G	24 hours
Chromium-total[3]	HNO_3 to pH < 2	P, G	6 months
Cobalt-total[3]	HNO_3 to pH < 2	P, G	6 months
Color	Cool 4°C	P, G	48 hours
Copper-total[3]	HNO_3 to pH < 2	P, G	6 months
Cyanide-total[3]	Cool 4°C, NaOH to pH > 12,0.6g ascorbic acid	P, G	14 days (24 hours when sulfide is present)[2]
Cyanide amenable to chlorination[3]	Cool 4°C, NaOH to pH > 12,0.6g ascorbic acid	P, G	14 days (24 hours when sulfide is present)[2]
Fluoride	None required	Polyethylene only	28 days
Gold-total[3]	HNO_3 to pH < 2	P, G	6 months
Hardness-total as $CaCO_3$	HNO_3 to pH < 2 H_2SO_4 to pH < 2,	P, G	6 months
Hydrogen ion (pH)	None required	P, G	Analyze Immediately
Iridium-total[3]	HNO_3 to pH < 2	P, G	6 months
Iron-total[3]	HNO_3 to pH < 2	P, G	6 months
Kjeldahl & Organic Nitrogen	Cool 4°C, H_2SO_4 to pH < 2	P, G	28 days
Lead-total[3]	HNO_3 to pH < 2	P, G	6 months
Magnesium-total[3]	HNO_3 to pH < 2	P, G	6 months
Mercury-dissolved[11] (does not include methyl mercury)	5mL/Lof 12 N HCl or 5mL/L of 12 N BrCl Cool 4°C	Fluoropolymer with fluoropolymer or fluoropolymer lined cap	28 days
Mercury-dissolved[11] (includes methyl mercury)	5mL/L of 12 N HCl Cool 4°C	Fluoropolymer with fluoropolymer or fluoropolymer lined cap	28 days
Mercury-total[3]	HNO_3 to pH < 2	P, G	28 days
Mercury-total[11](does not include methylmercury)	5mL/L of 12 N HCl or 5 mL/L of 12 N BrCl	Fluoropolymer with fluoropolymer or	28 days

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
	Cool 4°C	fluoropolymer lined cap	
Mercury-total[11] (includes methylmercury)	5mL/L of 12 N HCl Cool 4°C	Fluoropolymer with fluoropolymer or fluoropolymer lined cap	28 days
Molybdenum-total[3]	HNO_3 to pH < 2	P, G	6 months
Nickel-total[3]	HNO_3 to pH < 2	P, G	6 months
Nitrate (as N)	Cool 4°C	P, G	48 hours
Nitrate-Nitrite(as N)	Cool 4°C, H_2SO_4 to pH < 2	P, G	28 days
Nitrite (as N)	Cool 4°C	P, G	48 hours
Oil and grease	Cool 4°C HCl or H_2SO_4 to pH < 2	G	28 days
Organic carbon-total (TOC)	Cool 4°C, HCl or H_2SO_4 to pH < 2 or phosphoric acid	P, G	28 days
Orthophosphate (as P)	Filter Immediately, Cool 4°C	P, G	48 hours
Osmium-total[3]	HNO_3 to pH < 2	P, G	6 months
Oxygen dissolved (probe)	None Required	Glass bottle and top	Analyze Immediately
Oxygen dissolved (Winkler)	Fix on site and store in dark	Glass bottle and top	8 hours
Palladium-total[3]	HNO_3 to pH < 2	P, G	6 months
Petroleum Hydrocarbons	HCl to pH 2	G	7 days
Phenols	Cool 4°C, H_2SO_4 to pH < 2	G only	28 days
Phosphorus (elemental)	Cool 4°C	G	48 hours
Phosphorus-total	Cool 4°C, H_2SO_4 to pH < 2	P, G	28 days
Platinum-total[3]	HNO_3 to pH < 2	P, G	6 months
Potassium-total[3]	HNO_3 to pH < 2	P, G	6 months
Residue-total	Cool 4°C	P, G	7 days
Residue-filterable (TDS)	Cool 4°C	P, G	7 days
Residue-nonfilterable (TSS)	Cool 4°C	P, G	7 days
Residue-settleable	Cool 4°C	P, G	48 hours
Residue-volatile	Cool to 4°C	P, G	7 days
Rhodium-total[3]	HNO_3 to pH < 2	P, G	6 months
Ruthenium-total[3]	HNO_3 to pH < 2	P, G	6 months

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Salinity	Cool 4°C	G	28 days
Selenium-total[3]	HNO_3 to pH < 2	P, G	6 months
Silica-dissolved	Cool 4°C	P	28 days
Silver-total[3]	HNO_3 to pH < 2	P, G	6 months
Sodium-total[3]	HNO_3 to pH < 2	P, G	6 months
Specific conductance	Cool 4°C	P, G	28 days
Sulfate	Cool 4°C	P, G	28 days
Sulfide	Cool 4°C, add zinc acetate & NaOH to pH > 9	P, G	7 days
Sulfite	None required	P, G	Analyze Immediately
Surfactants	Cool 4°C	P, G	48 hours
Temperature	None required	P, G	Analyze Immediately
Thallium-total[3]	HNO_3 to pH < 2	P, G	6 months
Tin-total[3]	HNO_3 to pH < 2	P, G	6 months
Titanium-total[3]	HNO_3 to pH < 2	P, G	6 months
Turbidity	Cool 4°C	P, G	48 hours
Vanadium-total[3]	HNO_3 to pH < 2	P, G	6 months
Zinc-total[3]	HNO_3 to pH < 2	P, G	6 months
Organic Tests[4]			
Acenaphthene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$ Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Acenaphthylene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$	Glass, Teflon®-lined cap Store in dark	7 days until extraction; 40 days after extraction
Acrolein	Cool 4°C, 0.008% $Na_2S_2O_3$ Adjust pH to 4-5[6]	Glass, Teflon®-lined septum	14 days
Acrylonitrile	Cool 4°C, 0.008% $Na_2S_2O_3$ Adjust pH to 4-5[6]	Glass, Teflon®-lined septum	14 days[6]
Anthracene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzene	Cool 4°C, 0.008% $Na_2S_2O_3$ HCl to pH 2	Glass, Teflon®-lined septum	14 days
Benzidine[7]	Cool 4°C, 0.008% $Na_2S_2O_3$	Glass, Teflon®-lined cap	7 days until extraction[8]

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Benzo(a) anthracene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$ Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzo(a)pyrene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzo(b) fluoranthene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzo(g,h,i) perylene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzo(k) fluoranthene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Benzyl chloride	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined septum	14 days
Benzyl butyl phthalate[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Bis(2-chloroethoxy) methane[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Bis(2-chloroethyl) ether[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Bis(2-ethylhexyl) phthalate[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Bromodichloro-methane	Cool 4°C 0.008% $Na_2S_2O_3$[1], HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Bromoform	Cool 4°C 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Bromomethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Carbon tetrachloride	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
4-Chloro-3-methylphenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Chlorobenzene	Cool 4°C 0.008%$Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Chloroethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
2-Chloroethylvinyl ether	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Chloroform	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Chloromethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
2-Chloronaphthalene[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2-Chlorophenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
4-Chlorophenylphenyl ether[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Chrysene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dibenzo (a,h)anthracene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dibromochloro-methane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,2-Dichloro-benzene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,3-Dichloro-benzene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,4-Dichloro-benzene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
3,3'-Dichloro-benzidine[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined septum	14 days
Dichlorodifluoro-methane	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined septum	14 days
1,1-Dichloroethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,2-Dichloroethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,1-Dichloroethene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
trans-1,2-Dichloro-ethene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
2,4-Dichlorophenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
1,2-Dichloropropane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
cis-1,3-Dichloro-propene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
trans-1,3-Dichloro-propene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Diethyl phthalate[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,4-Dimethylphenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dimethyl phthalate	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Di-n-butyl phthalate[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Di-n-octyl phthalate[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,3-Dinitrophenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,4-Dinitrotoluene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,6-Dinitrotoluene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Epichlorohydrin	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined septum	14 days
Ethylbenzene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Fluoranthene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Fluorene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Hexachlorobenzene[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Hexachlorobutadiene[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Hexachlorocyclo-pentadiene[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Hexachloroethane[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Ideno(l,2,3-cd)pyrene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Isophorone[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Methylene chloride	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined cap	14 days
2-Methyl-4,6-dinitro phenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Naphthalene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Nitrobenzene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2-Nitrophenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
4-Nitrophenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
N-Nitrosodimethyl amine[7, 10]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
N-Nitrosodi-n-propyl-amine[7, 10]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
N-Nitrosodiphenyl-amine[7, 10]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,2'-Oxybis(1-chloro-propane)	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCB-1016[7]	Cool 4°C	Glass, Teflon®-lined cap,	7 days until extraction; 40 days afterextraction
PCB-1221[7]	Cool 4°C	Glass, Teflon®-lined cap,	7 days until extraction; 40 days after extraction
PCB-1232[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCB-1242[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCB-1248[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCB-1254[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCB-1260[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Pentachlorophenol	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Phenanthrene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Phenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Pyrene[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,3,7,8-Tetra-chlorodi-benzo-p-dioxin[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
1,1,2,2-Tetrachloro-ethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Tetrachloroethene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Toluene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,2,4-Trichloro-benzene[7]	Cool 4°C	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
1,1,1-Trichloroethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
1,1,2-Trichloroethane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Trichloroethene	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
Trichlorofluoro-Methane	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5]	Glass, Teflon®-lined septum	14 days
2,4,6-Trichloro-phenol[7]	Cool 4°C, 0.008% $Na_2S_2O_3$[1]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Vinyl chloride	Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2	Glass, Teflon®-lined septum	14 days[5]
Pesticides Tests[7]			
Aldrin	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Ametryn	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Aminocarb	Cool 4°C pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Atraton	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Atrazine	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Azinphos methyl	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Barban	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
alpha-BHC	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
beta-BHC	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
delta-BHC	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Gamma-BHC (Lindane)	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Captan	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Carbaryl	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Carbophenothion	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Chlordane	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Chloropropham	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,4-D	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
4,4'-DDD	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
4,4'-DDE	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
4,4'-DDT	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Demeton-O	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dementon-S	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Diazinon	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dicamba	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Dichlofenthion	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dichloran	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dicofol	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dieldrin	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Dioxathion	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Disulfoton	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Diuron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Endosulfan I	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Endosulfan II	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Endosulfan Sulfate	Cool 4°C,pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Endrin	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Endrin aldehyde	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Ethion	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Fenuron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Fenuron-TCA	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Heptachlor	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Heptachlor epoxide	Cool 4°C,pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Isodrin	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Linuron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Malathion	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Methiocarb	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Methoxychlor	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Mexacarbate	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Mirex	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Monuron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Monuron-TCA	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Nuburon	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Parathion methyl	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Parathion ethyl	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
PCNB	Cool 4°C,pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Perthane	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Prometron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Prometryn	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Propazine	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Propham	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Propoxur	Cool 4°C,pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Secbumeton	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Siduron	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

Parameter	Preservation	Container	Maximum Holding Time
Simazine	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Strobane	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Swep	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,4,5-T	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
2,4,5-TP (Silvex)	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Terbuthylazine	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Toxaphene	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction
Trifluralin	Cool 4°C, pH 5-9[10]	Glass, Teflon®-lined cap	7 days until extraction; 40 days after extraction

Table 2.4 Required Preservation, Container and Maximum Holding Times for Radiochemical Measurements in Drinking Water and Wastewater Samples

Parameter	Preservation	Container	Maximum Holding Time
Gross alpha	Conc. HCl or HNO_3 to pH 2*	P or G	6 months
48-Hour Rapid Gross Alpha*	Conc. HCl or HNO_3 to pH 2*	P or G	48-hours**
Gross beta	Conc. HCl or HNO_3 to pH 2*	P or G	6 months
Strontium-89	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Strontium-90	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Radium (total)	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Radium-224	Conc. HCl or HNO_3 to pH 2	P or G	4 days (recommended)
Radium-226	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Radium-228	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Cesium-134/137	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Iodine-131	None	P or G	8 days
Tritium	None	G	6 months
Uranium	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Plutonium	Conc. HCl or HNO_3To pH 2	P or G	6 months
Photon emitters (including Cobalt-60, Zinc-65, Ruthenium-106, and Barium-133)	Conc. HCl or HNO_3 to pH 2	P or G	6 months
Radon-222***	Cool 4°C	G	4 days (recommended)

Drinking water samples that are to be subject to radiochemical measurements shall be handled and preserved in accordance with the requirements of Table 2.4 and the requirements listed below. Table 2.4 includes requirements from the USEPA's Manual for the Certification of Laboratories Analyzing Drinking Water, USEPA-815-B-97-001. If there is any conflict between Table 2.4 and the USEPA publication (including any amendments or supplements) on which any part of Table 2.4 is based, the USEPA rule or publication shall control, except in reference to 48-Hour Rapid Gross Alpha and Radium-224 Methods.

* If HCl is used to acidify samples that are to be analyzed for gross alpha or gross beta activities, the acid salts shall be converted to nitrate salts before transfer of the samples to planchets.

**48-hour Rapid Gross Alpha Method applies to CWS compliance monitoring, as well as testing for radium under private well testing Act (PWTA). Maximum holding time to initial counting of the plancheted sample shall be 48 hours from sample collection. (N.J.A.C 7:18-6.4(a)3ii).

*** The method for sampling described in EPA/600/2-87/082-1989 "Two Test Procedures for Radon in Drinking Water" shall be followed.

Sample shall be acidified at the time of collection, in accordance with the requirements listed under "Preservation" in Table 2.4. A minimum of 16 hours shall elapse between acidification and analysis. If suspended solids activity is to be measured, then a second unpreserved sample shall be taken for this measurement; and if the sample is shipped in its original container to a certified environmental laboratory or storage area, acidification of the sample (in its original container) may be delayed for a period not to exceed five days.

Table 2.5 Required Preservation, Container and Maximum Holding Times for Radiochemical Measurements in Solid/Hazardous Waste Samples (Soils, Liquids, Sediments, and Sludges)

Parameter	Preservation	Container Volume	Maximum Holding Time
Gross Alpha-Beta	Cool to 4 ° C	1 liter	6 months
Radium-Total	Cool to 4 ° C	1 liter	6 months
Radium-226	Cool to 4 ° C	1 liter	6 months
Radium-228	Cool to 4 ° C	1 liter	6 months
Photon Emitters: Co-60, Zn-65, Cs-134/137, Ba-133	Cool to 4 ° C	1 liter	6 months
Strontium-89, 90	Cool to 4 ° C	1 liter	6 months
Uranium	Cool to 4 ° C	1 liter	6 months
Thorium	Cool to 4 ° C	1 liter	6 months

Solid/hazardous waste samples (non-aqueous) shall be handled and preserved in accordance with requirements of Table 2.5. Table 2.5 incorporates requirements form SW-846. If there is any conflict between Table 2.5 and SW-846 (including any amendments or supplements), SW-846 shall prevail.

Table 2.6 Required Preservation, Container and Maximum Holding Times for Solid/Hazardous Waste Samples (Soils, Liquids, Sediments, Sludges, and Ambient Air)

Parameter	Preservation	Container	Maximum Holding Time
Volatile Organics for soil/ sediment, and sludge	Cool 4°C	Glass Teflon®-lined cap	14 days
Volatile Organics (Non-Aqueous sample)	Cool 4°C, dark	Encore™ or equivalent field core sampling/ storage containers & 60 ml septum sealed glass vial	Transfer immediately upon receipt to methanol and sodium bisulfate solution, analyze within 14 days
Volatile Organics (Non-Aqueous sample)	Cool 4°C, dark	Field preserved vials methanol & sodium bisulfate Glass, 40 ml vial stir bar [sodium bisulfate only], septum sealed glass vial & 60 ml septum sealed glass vial	14 days
Volatile organics in liquid samples	Cool 4°C, if residual Cl_2 add $Na_2S_2O_3$ and HCl to pH < 2	Glass, Teflon®-lined cap	14 days
Acrolein and Acrylonitrile in liquid samples	Cool 4°C Adjust to pH 4-5	Glass, Teflon®-lined cap	14 days
Semivolatile organics/ organochlorine pesticides/ PCBs and herbicides for soil/sediment, and sludge	Cool 4°C	Glass, Teflon®-lined cap	14 days until extraction; 40 days after extraction
Semivolatile organics/ organochlorine pesticides/ PCBs and herbicides for concentrated waste samples	Cool 4°C	Glass, Teflon®-lined cap	14 days until extraction; 40 days after extraction
Metals except Cr VI and Hg (total) for liquid samples	Cool 4°C, HNO_3 to pH < 2	P, G	6 months
Metals except Cr VI and Hg (dissolved) for liquid samples	Cool 4°C, Filter on-site HNO_3 to pH < 2	P, G	6 months
Metals except Cr VI and Hg (suspended) for liquid samples	Cool 4°C Filter on-site	P, G	6 months

Table 2.6 (continued) Required Preservation, Container and Maximum Holding Times for Solid/Hazardous Waste Samples (Soils, Liquids, Sediments, Sludges, and Ambient Air)

Parameter	Preservation	Container	Maximum Holding Time
Metals except Cr VI and Hg for solid samples	Cool 4°C	P, G	6 months
Chromium VI for solid samples	Cool 4°C	P, G	30 days to digestion; analysis 168 hours after digestion
Chromium VI for liquid samples	Cool 4°C	P, G	24 hours
Mercury (total) for liquid samples	HNO_3 to pH < 2	P, G	28 days
Mercury (dissolved) for liquid samples	Filter on-site HNO_3 to pH < 2	P, G	28 days
Mercury (total) for solid samples	Cool 4°C	P, G	28 days
Ambient Air Analysis			
TO-15 Volatile Organics in Specially Prepared Canisters – GC/MS	None	Specially prepared canisters	30 days from sample collection
TO-17 Volatile Organics in Ambient Air using Active Sampling onto Sorbent Tubes	Cool ≤4°C after sample collection and in refrigeration unless samples are analyzed the same day of collection. The samples must be stored in an organic solvent free environment. Small packages of activated charcoal/silica gel must be with each shipment container of multiple tubes.	Sorbent Tubes	30 days from sample collection; except 7days if limonene, carene, labile sulfur, bischloromethylether or nitrogen containing volatiles

Table 2.7 Required Preservation, Container and Maximum Holding Times From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

Parameter	Preservation	Container	Maximum Holding Time From Validated Time of Sample Receipt (VTSR)
Volatile Organics (Aqueous)	Cool 4°C, dark 0.08% $Na_2S_2O_3$ if residual Cl_2	Glass, white polypropylene or black phenolic plastic screw Teflon®-lined septum	10 days
Volatile Organics (Non-Aqueous)	Cool 4°C, dark	Glass, polypropylene cap, white Teflon® liner	10 days
Volatile Organics (Non-Aqueous)	Cool 4°C, dark	Encore™ or equivalent field core sampling/ storage container & 60 ml septum sealed glass vial	Transfer immediately upon receipt to methanol and sodium bisulfate solution analyze within 10 days
Volatile Organics (Non-Aqueous)	Cool 4°C, dark	Field preserved vials methanol & sodium bisulfate glass, 40 ml vial stir bar [sodium bisulfate only], septum sealed glass vial & 60 ml septum sealed glass vial	10 days
Pesticide/PCBs	Cool 4°C, dark	Amber Glass, white polypropylene or black phenolic, baked polyethylene cap	Extraction Aqueous: continuous liquid-liquid extraction must be started within 5 days, Non-Aqueous: 10 days analysis, 40 days from VTSR
Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Non Aqueous)	Cool 10°C, dark	Amber Glass, white polypropylene or black phenolic, baked polyethylene cap	Extraction: 30 days from VTSR, analysis 45 days from extraction

Table 2.7 (continued) Required Preservation, Container and Maximum Holding Times From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

Parameter	Preservation	Container	Maximum Holding Time From Validated Time of Sample Receipt (VTSR)
Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Aqueous)	Cool 4°C, dark	Amber Glass, white polypropylene or black phenolic, baked polyethylene cap	Extraction: 30days from VTSR, analysis: 45 days from extraction
Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Fish and Tissue Samples)	Cool 4°C, dark until prepared then-10°C until analysis	Wrapped in aluminum foil in field	Extraction: 1 year from VTSR. Once thawed, must be analyzed within 24 hours. Analysis: 45 days from extraction
Cyanide, total amenable to chlorination	Aqueous - 0.6g ascorbic acid if residual Cl_2, NaOH to pH>12, cool 4°C, $CaCO_3$ in presence of sulfide	Plastic bottle, plastic cap, plastic liner	14 days
Metals except Hg (Aqueous)	HNO_3 to pH<2, cool 4°C, until analyzed	Plastic bottle, plastic cap, plastic liner	180 days
Metals – Dissolved except Hg (Aqueous)	Field filter 0.45 µm pore diameter filter, rinse bottle with sample then immediately HNO_3 to pH<2, cool 4°C until analyzed	Plastic bottle, plastic cap, plastic liner	180 days
Metals except Hg (Non-Aqueous)	Cool 4°C until analyzed	Flint glass bottle, black phenolic cap, polyethylene liner	180 days
Hg (Aqueous)	HNO_3 to pH<2, Cool, 4°C until analyzed	Plastic bottle, plastic cap, plastic liner	26 days
Hg – Dissolved (Aqueous)	Field filter 0.45 µm pore diameter filter, rinse bottle with sample immediately, HNO_3 to pH<2, Cool, 4°C until analyzed	Plastic bottle, plastic cap, plastic liner	26 days
Hg (Non-Aqueous)	HNO_3 to pH<2, Cool, 4°C until analyzed	Flint glass bottle, black phenolic cap, polyethylene liner	28 days

Table 2.7 (continued) Required Preservation, Container and Maximum Holding Time From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

Parameter	Preservation	Container	Maximum Holding Time From Validated Time of Sample Receipt (VTSR)
Cyanide (Aqueous)	0.6g ascorbic acid if residual Cl_2 NaOH to pH>12, cool 4°C until analyzed	Plastic bottle, plastic cap, plastic liner	14 days
Cyanide (Non-Aqueous)	Cool 4°C, until analyzed	Plastic bottle, plastic cap, plastic liner	14 days
Low Level Volatile Organics	Cool 4°C, dark, 0.008% $Na_2S_2O_3$	Glass, black phenolic or white polypropylene screw cap, Teflon®-lined septum	7 days
Low Level Semi-volatile Organics	Cool 4°C, dark	White polypropylene or black phenolic, baked polyethylene cap	Extraction: continuous extraction must be started within 5 days of VTSR. Analysis: 40 days from start of extraction
Low Level Pesticides/PCBs Organics	Cool 4°C, dark	Amber glass, white polypropylene or black phenolic, baked polyethylene cap	Extraction: continuous extraction must be started within 5 days of VTSR. Analysis: 40 days from start of extraction

Footnotes

[1] Use only in the presence of residual chlorine.

[2] Optionally, all samples may be tested with lead acetate paper before pH adjustment in order to determine if sulfide is present. If sulfide is present, it can be removed by the addition of cadmium nitrate powder until a negative spot test is obtained. The sample is filtered and then the NaOH is added to pH 12.

[3] Filter samples immediately on-site before adding preservatives for dissolved metals.

[4] Applies to samples to be analyzed by GC, LC, or GC/MS for specific compounds.

[5] Sample receiving no pH adjustment shall be analyzed within seven days of sampling.

[6] The pH adjustment is not required if acrolein will not be measured. Samples for acrolein receiving no pH adjustment shall be analyzed within three days of sampling.

[7] When the extractable analytes of concern fall within a single chemical Category, the specified preservative and maximum holding times shall be observed for optimum safe guard of sample integrity. When the analyses of concern fall within two or more chemical categories, the sample may be preserved by cooling to four (4) degrees Celsius, reducing residual chlorine with 0.008% $Na_2S_2O_3$, storing in the dark and, for pesticides only, adjusting the pH to 6-9.Samples preserved in this manner may be held for seven days before extraction and 40 days after extraction. Exceptions to this optional preservation and holding time procedure are noted in reference 1 (regarding the requirement for thiosulfate reduction of residual chlorine), and references 8 and 9 (regarding the analysis of benzidine).

[8] Extracts may be stored up to seven days before analysis if storage is conducted under an inert (oxidant-free) atmosphere.

[9] For the analysis of diphenylnitrosamine, add 0.008% $Na_2S_2O_3$ and adjust pH to 7-10 with NaOH within 24 hours of sampling.

[10] The pH adjustment may be performed upon receipt at the environmental laboratory and may be omitted if the samples are extracted within 72 hours of collection. For the analysis of aldrin, add 0.008% $Na_2S_2O_3$.

[11] Method 1631 Revision B: Mercury in Water by Oxidation, Purge and Trap and Cold Vapor Atomic Fluorescence Spectrometry is required. Samples may be shipped to laboratory unpreserved if collected in fluoropolymer bottles, filled to top with no headspace, capped tightly, and maintained at 4°C from time of collection until preservation. The samples must be acid preserved within 48 hours after sampling.

[12] First use of samples shall begin within 36 hours of collection. For storm water discharges, first use of the sample shall begin within 48 hours of collection.

[13] Once collected if the assay can not begin within 8 hours then the sample must be frozen. Once defrosted, the sample can be held at 4°C until the assay begins. The assay must then be done the day that the sample is defrosted.

[14] Elution, concentration and the application of the purified sample to the slide must be completed in one work day. The sample must be stained within 72 hours of the application of the purified sample to the slide. Up to 7 days are permitted between sample staining and examination.

Table 2.8 Analysis of BIOLOGICAL Samples Using NJDEP Methodologies for Freshwater, Estuarine And Marine Samples

Parameter	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time	Analytical Methodology	Sample Container Cleaning
PHYTOPLANKTON FRESHWATER						
Species Composition (live samples)	P,G	250 ml	Cool, 4° C	24 hours	SM17:10200 EPA73: Plankton 3,4	(2)
(preserved)	P,G	1000 ml	50 ml neutralized formalin store/transport in dark, cool container	1 month	As Above	As Above
Chlorophyll a	P,G amber or foil-covered	250 ml	Cool, 4° C store/transport in dark	48 hours	SM17:10200H EPA73: Plankton 5.2	As Above
MARINE AND ESTUARINE						
Species Composition (live samples)	P,G	250 ml	Cool, 4° C	24 hours	SM17:10200 EPA73: Plankton 3,4	(2)
(preserved)	P,G	1000 ml	10 ml or more Lugol's solution to maintain weak tea color. Store/transport in dark, cool container.	48 hours	As Above	As Above
PHYTOPLANKTON MARINE AND ESTUARINE						
Chlorophyll a	P,G amber or foil-covered	250 ml	Cool, 4° C store/transport in dark	48 hours	SM17:10200H EPA73: Plankton 5.2	As Above
ZOOPLANKTON						
Freshwater	P,G	6,000 ml	300 ml neutralized formalin. Store in cool container	1 month	SM17: 10200 EPA73: Plankton 3,4	(2)

Table 2.8 (continued) Analysis of BIOLOGICAL Samples Using NJDEP Methodologies for Freshwater, Estuarine And Marine Samples

Parameter	Sample Container	Container Volume	Preservation[1]	Maximum Holding Time	Analytical Methodology	Sample Container Cleaning
Marine & Estuary	P,G	As Above	5% formalin (5 ml neutralized formalin/100 ml tap water), store and transport in cool container	As Above	As Above	As Above
PERIPHYTON DIATOMETER SLIDES AND ROCK SCRAPINGS						
Species composition	125ml jar polyseal cap	N/A	Lugol's solution (4% buffered formalin, "M3" fixative, or, 2 % glutaraldehyde), store and transport in iced container in the dark	1 month	SM17: 10300 EPA99 Periphyton.6	As Above
PERIPHYTON						
Chlorophyll a	P,G	30 ml	90% neutralized acetone, cool 0-4° C, store and transport in dark container	48 hours	SM17: 10300 EPA73: Periphyton 3.2	(2)
Ash Free Weight	120 ml jar polyseal cap	30 ml	90 % neutralized acetone, cool 0-4° C, store and transport in dark container	N/A	SM17:10300 EPA73: Plankton 5.1	As Above
MACROINVERTEBRATES						
Species composition	P,G	N/A	5% neutralized formalin (5 ml neutralized, formalin/100 ml sample water [95% ethanol, isopropyl alcohol])	N/A	SM17:10500 EPA99: Macroinvertebrates 7	As Above

(1) Neutralized formalin = 100 % neutralized fomalin with sodium tetraborate to pH 7.0 – 7.3
(2) Warm detergent solution wash, thorough rinse in tap and distilled water.

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